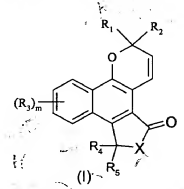
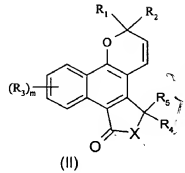
WHAT IS CLAIMED IS:

1. A compound having the formula (I) or (II) below:



(I)



(II)

in which:

- X is an oxygen or NR_6, R_6 being a hydrogen, a linear or branched alkyl group comprising from 1 to 12 carbon atoms, a cycloalkyl group comprising from 3 to 12 carbon atoms, an aryl group comprising in its basic structure 6 to 24 carbon atoms, or a heteroaryl group comprising in its basic structure 4 to 24 carbon atoms and at least one heteroatom selected from sulfur, oxygen, and nitrogen, said aryl or heteroryl group's basic structure optionally being substituted by at least one substituent selected from the group consisting of a linear or branched alkyl comprising 1 to 12 carbon atoms, a linear or branched alkoxy comprising 1 to 12 carbon atoms, a halogen, and a hydroxy;
- R_4 and R_5, which are identical or different, independently represent a hydrogen, a hydroxy, or a linear or branched alkyl group comprising 1 to 6 carbon atoms, or R_4 and R_5 together form an oxo group (=O);
- R_1 and R_2, which are identical or different, independently are:
  - hydrogen,
  - a linear or branched alkyl group comprising from 1 to 12 carbon atoms,
  - a cycloalkyl group comprising from 3 to 12 carbon atoms,
  - an aryl group comprising in its basic structure 6 to 24 carbon atoms or a heteroaryl group comprising in its basic structure 4 to 24 carbon atoms and at least one heteroatom selected from sulfur, oxygen, and nitrogen, said aryl or heteroryl group's basic structure optionally being substituted with at least one substituent selected from the group consisting of:
    + a halogen,

+ a hydroxy,
+ a linear or branched alkyl group comprising from 1 to 12 carbon atoms,
+ a linear or branched alkoxy group comprising from 1 to 12 carbon atoms,
+ a haloalkyl or haloalkoxy group corresponding respectively to the above (C_1-C_{12})alkyl or (C_1-C_{12})alkoxy groups substituted with at least one halogen atom,
+ a phenoxy or naphthoxy group optionally substituted with at least one linear or branched alkyl or alkoxy group comprising from 1 to 12 carbon atoms,
+ a linear or branched alkenyl group comprising from 2 to 12 carbon atoms,
+ an -NH_2 group,
+ an -NHR group, wherein R is a linear or branched alkyl group comprising from 1 to 6 carbon atoms or a phenyl group optionally substituted by at least one linear or branched alkyl comprising from 1 to 6 carbon atoms,
+ a group having the formula:

wherein R' and R", identical or different, independently represent a linear or branched alkyl group comprising from 1 to 6 carbon atoms or a phenyl group optionally substituted with at least one linear or branched alkyl comprising 1 to 6 carbon atoms, or R' and R", together with the nitrogen atom to which they are bonded, represent a 5- to 7-membered ring which optionally comprises at least one other heteroatom selected from oxygen, sulfur, and nitrogen, said nitrogen optionally being substituted with a group R'", which is a linear or branched alkyl group comprising from 1 to 6 carbon atoms, and
+ a methacryloyl group or an acryloyl group, or

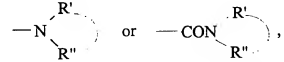
- an aralkyl or heteroaralkyl group in which the alkyl part is linear or branched and comprises from 1 to 4 carbon atoms and in which the aryl

or heteroaryl part is as defined above for the aryl or heteroaryl group,

or

said two substituents R_1 and R_2 together form an adamantyl, norbornyl, fluorenylidene, di(C_1-C_6)alkylanthracenylidene, or spiro(C_5-C_6)cycloalkyl-anthracenylidene group, said group being optionally substituted with at least one of the substituents listed above for R_1 and R_2 as an aryl or heteroaryl group;

- R_3, which are identical or different, independently are:
  - a halogen,
  - a hydroxy,
  - a linear or branched alkyl group comprising from 1 to 12 carbon atoms,
  - a cycloalkyl group comprising from 3 to 12 carbon atoms,
  - a linear or branched alkoxy group comprising from 1 to 12 carbon atoms,
  - a haloalkyl, halocycloalkyl, or haloalkoxy group corresponding respectively to the above alkyl, cycloalkyl, and alkoxy groups substituted with at least one halogen atom,
  - an aryl or heteroaryl group as defined above for R_1 and R_2,
  - an aralkyl or heteroaralkyl group in which the alkyl part is linear or branched and comprises from 1 to 4 carbon atoms and in which the aryl or heteroaryl part is as defined above for R_1 and R_2,
  - a phenoxy or naphthoxy group optionally substituted with at least one linear or branched alkyl or alkoxy group comprising from 1 to 12 carbon atoms,
  - one of the following amine or amide groups: $-NH_2$, $-NHR$, $-CONH_2$, $-CONHR$,



R, R', and R" respectively being as defined above for the amino substituents of R_1 and R_2 as aryl or heteroaryl, or

  - a group $-OCOR_7$ or $-COOR_7$, wherein R_7 is a linear or branched alkyl group comprising from 1 to 6 carbon atoms, a cycloalkyl group comprising from 3 to 6 carbon atoms, or a phenyl group optionally substituted with at least one of the substituents listed above for R_1 and R_2 as aryl or heteroaryl,

or

at least two adjacent groups R_3 together form an aromatic or non-aromatic

cyclic group having one ring or two fused rings which ring(s) are 5- to 7-membered, which ring(s) optionally comprise at least one heteroatom selected from the group consisting of oxygen, sulfur, and nitrogen, and which ring(s) are optionally substituted with at least one substituent selected from those given above in the definition for the aryl or heteroaryl groups which can form R_1 or R_2; and

- m is an integer from 0 to 4.

2. A compound according to claim 1 having formula (I).

3. A compound according to claim 1 having formula (II).

4. A compound according to claim 1, wherein X is an oxygen.

5. A compound according to claim 1, wherein X is an oxygen and R_4 and R_5 together form an oxo group.

6. A compound according to claim 1, wherein X is an oxygen and each of R_4 and R_5 is a hydrogen.

7. A compound according to claim 1, wherein X is anNR_6 group.

8. A compound according to claim 1, wherein X is an NR_6 group and R_4 and R_5 together form an oxo group.

9. A compound according to claim 1, wherein X is an NR_6 group and each of R_4 and R_5 is a hydrogen.

10. A compound according to claim 1, wherein X is an NR_6 group, R_4 is a hydrogen, and R_5 is a hydroxy.

11. A compound according to claim 1, wherein

- R_1 and R_2 are identical or different and independently represent optionally substituted aryl or heteroaryl groups whose basic structure is selected from those of phenyl, naphthyl, biphenyl,

pyridyl, furyl, benzofuryl, dibenzofuryl, N-(C_1-C_6)alkylcarbazole, thienyl, benzothienyl, dibenzothienyl, and julolidinyl groups; or

- R_1 and R_2 together form an adamantyl or norbornyl group.

12. A compound according to claim 11 having formula (I).

13. A compound according to claim 11 having formula (II).

14. A compound according to claim 11, wherein X is an oxygen.

15. A compound according to claim 11, wherein X is an NR_6 group.

16. A compound according to claim 1, wherein at least one of R_1 and R_2 is a para-substituted phenyl group.

17. A (co)polymer and/or crosslinked product obtained by polymerizing and/or crosslinking and/or grafting at least one monomer comprising at least one compound according to claim 1.

18. A photochromic compound which is constituted by a compound according to claim 1, or by a mixture of at least two compounds according to claim 1, or by a mixture of at least one compound according to claim 1 and at least one other photochromic compound of a different type and/or at least one non-photochromic coloring agent.

19. A photochromic composition which comprises:

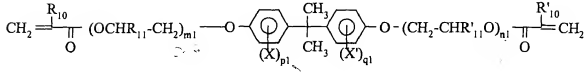
- at least one compound according to claim 1, and/or
- at least one linear or crosslinked (co)polymer which contains, in its structure, at least one compound according to claim 1, and optionally, at least one other photochromic compound of a different type and/or at least one non-photochromic coloring agent and/or at least one stabilizer.

20. A (co)polymer matrix which comprises:

- at least one compound according to claim 1.

21. A (co)polymer matrix according to claim 20, wherein the (co)polymer is selected from the group consisting of:

- an alkyl, cycloalkyl, (poly or oligo)ethylene glycol, aryl or arylalkyl mono-, di-, tri-, or tetra- acrylate or mono-, di-, tri- or tetra- methacrylate which is optionally halogenated or which optionally comprises at least one ether and/or ester and/or carbonate and/or carbamate and/or thiocarbamate and/or urea and/or amide group,
- a polystyrene, polyether, polyester, polycarbonate, polycarbamate, polyepoxide, polyurea, polyurethane, polythiourethane, polysiloxane, polyacrylonitrile, polyamide, aliphatic or aromatic polyester, vinylic polymers, cellulose acetate, cellulose triacetate, cellulose acetate-propionate, or polyvinylbutyral,
- a (co)polymer obtained from a difunctional monomer of the following formula:



in which:

- Δ R_{10}, R'_{10}, R_{11} and R'_{11} are identical or different and independently are a hydrogen or a methyl group,
- Δ m_1 and n_1 independently are integers between 0 and 4 inclusive,
- Δ X and X', which are identical or different, are a halogen, and
- Δ p_1 and q_1 independently are integers between 0 and 4 inclusive;

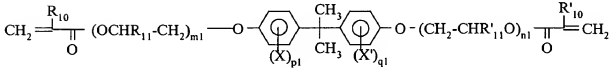
- a copolymer of at least two types of copolymerizable monomers selected from the monomers which are precursors of the polymers listed above; and
- combinations thereof.

22. A (co)polymer matrix which comprises:

- at least one photochromic composition according to claim 19.

23. A (co)polymer matrix according to claim 22, wherein the (co)polymer is selected from the group consisting of:

- an alkyl, cycloalkyl, (poly or oligo)ethylene glycol, aryl or arylalkyl mono-, di-, tri-, or tetra- acrylate or mono-, di-, tri- or tetra- methacrylate which is optionally halogenated or which optionally comprises at least one ether and/or ester and/or carbonate and/or carbamate and/or thiocarbamate and/or urea and/or amide group,
- a polystyrene, polyether, polyester, polycarbonate, polycarbamate, polyepoxide, polyurea, polyurethane, polythiourethane, polysiloxane, polyacrylonitrile, polyamide, aliphatic or aromatic polyester, vinylic polymers, cellulose acetate, cellulose triacetate, cellulose acetate-propionate, or polyvinylbutyral,
- a (co)polymer obtained from a difunctional monomer of the following formula:



in which:

- Δ R_{10}, R'_{10}, R_{11} and R'_{11} are identical or different and independently are a hydrogen or a methyl group,
- Δ m_1 and n_1 independently are integers between 0 and 4 inclusive,
- Δ X and X', which are identical or different, are a halogen, and
- Δ p_1 and q_1 independently are integers between 0 and 4 inclusive;

- a copolymer of at least two types of copolymerizable monomers selected from the monomers which are precursors of the

polymers listed above; and

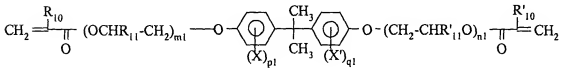
- combinations thereof.

24. A (co)polymer matrix which comprises:

- at least one (co)polymer and/or crosslinked product according to claim 17.

25. A (co)polymer matrix according to claim 24, wherein the (co)polymer is selected from the group consisting of:

- an alkyl, cycloalkyl, (poly or oligo)ethylene glycol, aryl or arylalkyl mono-, di-, tri-, or tetra- acrylate or mono-, di-, tri- or tetra- methacrylate which is optionally halogenated or which optionally comprises at least one ether and/or ester and/or carbonate and/or carbamate and/or thiocarbamate and/or urea and/or amide group,
- a polystyrene, polyether, polyester, polycarbonate, polycarbamate, polyepoxide, polyurea, polyurethane, polythiourethane, polysiloxane, polyacrylonitrile, polyamide, aliphatic or aromatic polyester, vinylic polymers, cellulose acetate, cellulose triacetate, cellulose acetate-propionate, or polyvinylbutyral,
- a (co)polymer obtained from a difunctional monomer of the following formula:



in which:

- Δ R_{10}, R'_{10}, R_{11} and R'_{11} are identical or different and independently are a hydrogen or a methyl group,
- Δ m_1 and n_1 independently are integers between 0 and 4 inclusive,
- Δ X and X', which are identical or different, are a halogen, and

Δ p_l and q_l independently are integers between 0 and 4 inclusive;

- a copolymer of at least two types of copolymerizable monomers selected from the monomers which are precursors of the polymers listed above; and
- combinations thereof.

26. An ophthalmic or solar article comprising:
- at least one compound according to claim 1.

27. An article according to claim 26, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.

28. An ophthalmic or solar article comprising:
- at least one at least one photochromic composition according to claim 19.

29. An article according to claim 28, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.

30. An ophthalmic or solar article comprising:
- at least one (co)polymer and/or crosslinked product according to claim 17.

31. An article according to claim 30, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.

32. An ophthalmic or solar article comprising:
- at least one matrix according to claim 20.

33. An article according to claim 32, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.

34. An ophthalmic or solar article comprising:
- at least one matrix according to claim 22.

35. An article according to claim 34, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.

36. An ophthalmic or solar article comprising:

- at least one matrix according to claim 24.

37. An article according to claim 36, wherein said article is selected from the group consisting of a lens, a glass pane, or an optical device.